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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/063,601	05/03/2002	Nicholas E. Roddy	121891	9698

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EXAMINER	
GUYTON, PHILIP A	

ART UNIT	PAPER NUMBER
2113	

DATE MAILED: 10/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/063,601	RODDY ET AL.	
	Examiner	Art Unit	
	Philip Guyton	2113	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 May 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6-11,13-16 and 18-23* is/are rejected.

7)☒ Claim(s) *5,12,17,24* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 May 2002* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *20040930*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed 07/01/02 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference characters not mentioned in the description: Fig.1 – 25, 27, 200

Fig.4 – 60

Fig.5 – 82

Fig.7 - 76

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference characters in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheets should be labeled "Replacement Sheet" in the page

header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The disclosure is objected to because of the following informalities: paragraph 0043 refers to items 100 and 52 in Fig.6. It is suggested that items 200 and 25 were intended. Appropriate correction is required.

Claim Objections

4. Claims 9 and 21 are objected to because of the following informalities: the phrase "wherein the respective continuous observations of operational parameters" lack antecedence. It is suggested that instead of being dependent on claims 6 and 18 that claims 9 and 21 be dependent on claims 8 and 20, respectively. Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-4, 6-11, 13-16, and 18-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chirashnya et al. (6,598,179) in view of Yamamoto et al. (6,256,594).

With respect to claim 1, Chirashnya et al. disclose a method for processing fault log data from a machine comprising a plurality of respective pieces of equipment (column 2, lines 3-5), the method comprising:

collecting fault log data [error log (column 2, lines 6-10)] comprising a plurality of faults from any malfunctioning piece of equipment;

identifying a plurality of distinct faults [fault conditions of interest (column 2, lines 16-18)] in the fault log data;

generating at least one distinct fault cluster [events (column 2, lines 21-24)] from the plurality of distinct faults;

generating a plurality of weighted [probability (column 3, lines 36-39)] repair and distinct fault cluster combinations [multiple possible faults and associated cures (column 6, lines 25-35)]; and

identifying at least one repair for the at least one fault cluster using the plurality of weighted repair and distinct fault cluster combinations [results displayed to user (column 12, lines 45-53)].

However, Chirashnya et al. do not disclose expressly wherein the method further processing operational parameter data indicative of operational and/or environmental conditions for the respective pieces of equipment, the method comprising:

collecting operational parameter data relatable to each respective time of occurrence of the plurality of faults from the malfunctioning equipment;

identifying a plurality of data buckets indicative of respective levels of quantization of each operational parameter;

relating to each generated fault cluster a respective quantization level of at least one operational parameter to provide at least one fault cluster configurable in at least one of the following cluster configurations: a stand-alone fault cluster configuration and a cluster configuration enhanced with quantized operational parameter data;

Yamamoto et al. teach the collection of operating parameters at the time of a fault detection (column 2, lines 50-64), identifying data ranges for levels of quantization of each operating parameter (Fig.4 and column 7, lines 20-46), and relating each fault group to a quantization level of the operating parameters (Fig.3 and column 3, lines 1-10).

Chirashnya et al. and Yamamoto et al. are analogous art because they are from the same field of endeavor – analysis and diagnosis of machine faults.

At the time the invention was made it would have been obvious to a person of ordinary skill in the art to modify Chirashnya et al. with the teachings of Yamamoto et al. A person of ordinary skill in the art would have done so to allow for supplementary determination of the seriousness of a fault (Yamamoto et al. – column 1, lines 17-22 and column 2, lines 16-28), providing an enhanced result for the operator (Chirashnya et al. – column 1, lines 28-41).

With respect to claims 2, 10, 14, and 22, Chirashnya et al. and Yamamoto et al. disclose the same as in claim 1 above, Yamamoto et al. further disclosing wherein each data bucket is configured to capture and distinguish statistically - measurable influences

on the performance of a given piece of equipment based on the quantization level of each operational parameter [variables dictating ranges may be set depending on parameter (column 7, lines 20-46)].

With respect to claim 13, Chirashnya et al. and Yamamoto et al. disclose the same as in claim 1 above, Chirashnya et al. further disclosing a system including a database (Fig.1, item 26, column 3, lines 63-67 and column 4, lines 1-2), and a processor (Fig.1, item 22 and column 3, lines 51-62) for the respective method of claim 1.

With respect to claims 3, 11, 15, and 23, Chirashnya et al. and Yamamoto et al. disclose wherein each of the plurality of weighted repair and distinct fault cluster combinations is generated from a plurality of cases (Chirashnya et al. – column 6, lines 28-35 and column 12, lines 59-67), each case comprising a repair and at least one distinct fault enhanceable with quantized operational parameter data.

With respect to claims 4 and 16, Chirashnya et al. and Yamamoto et al. disclose the method further comprising determining a respective weight [probability or severity (Chirashnya et al. – column 11, lines 42-56)] for each of the plurality of weighted repair and distinct fault cluster combinations enhanced with quantized operational parameter data.

With respect to claims 6 and 18, Chirashnya et al. and Yamamoto et al. disclose wherein the operational parameter data comprises a plurality of snapshot observations [status code (Yamamoto et al. – column 7, lines 7-19)] of operational parameters from the pieces of equipment.

With respect to claims 7 and 19, Chirashnya et al. and Yamamoto et al. disclose wherein the respective snapshot observations of operational parameters from the machine and the logging of respective faults from the machine are temporally aligned relative to one another (Yamamoto et al. – column 7, lines 7-11).

With respect to claims 8 and 20, Chirashnya et al. and Yamamoto et al. disclose wherein the operational parameter data comprises a plurality of continuous observations [snapshot data (Yamamoto et al. – column 1, lines 46-50 and column 8, lines 38-49)] of operational parameters from the machine.

With respect to claims 9 and 21, Chirashnya et al. and Yamamoto et al. disclose wherein the respective continuous observations of operational parameters from the machine and the logging of respective faults from the machine are temporally co-relatable to one another (Yamamoto et al. – column 8, lines 38-49).

Allowable Subject Matter

7. Claims 5, 12, 17, and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip Guyton whose telephone number is (703) 305-4669, and will change to (571) 272-3807 beginning 10/13/04. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Beausoliel can be reached on (703) 305-9713. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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